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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/851,849
Filing Date: May 09, 2001
Appellant(s): DAVID ET AL.

MAILED
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Group 3700

David W. Okey
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 27, 2006 appealing from the Office action mailed June 25, 2004.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is substantially correct. In the very last sentence of the status of the claims, Applicant indicates that "[C]laims 5 and 6 are finally rejected under 35 U.S.C. §103(a) as being obvious over U.S. Pat. No. 5,533,845 to John Glover, and further in view of Stornetta, Ko and Ribich". However, it is noted that the rejection is not based on a combination of references including both Stornetta and Ko, but rather is based on a combination of references including either one of Stornetta or Ko, i.e., claims 5 and 6 are finally rejected under 35 U.S.C. §103(a) as being obvious over U.S. Pat. No. 5,533,845 to John Glover, and further in view of either one of Stornetta or Ko, and also further in view of Ribich.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection (i.e., that no amendments after final have been filed) contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

Furthermore, to quickly facilitate understanding of the claimed invention, Examiner is providing a copy of at least the broadest independent claim (claim 12) with reference element

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numbers or other support information included in parenthesis (where possible) to correspond to the claim limitations. See Figures 8 and 6.

Claim 12 (Original). 12. A sheet metal router apparatus (70), comprising:

a guide (62), fastened to the sheet metal (50) by fasteners (58) drilled through the sheet metal (the feature of the fasteners 58 extending **through** the sheet metal is not shown in the drawings, but does have support in at least original claim 12);

a platform (64), mounted on the guide (62); and

a router (60) having a vertical adjustment (73, 75, see page 5, the paragraph beginning on line 15), mounted on the platform (64), wherein an operator adjusts the router vertical adjustment (73, 75) for a desired depth-of-cut and moves the platform (64) continuously along the guide (62) to make a desired cut.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following patents were used as a basis for at least one ground(s) of rejection of the present claims.

5,533,845	GLOVER	7-1996
5,106,243	HUNT	4-1992
3,133,339	RIBICH	5-1964
5,503,203	STORNETTA	4-1996

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3,837,383	KO	9-1974
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The following patents were **not** used as a basis for at least one ground(s) of rejection of the present claims, but are instead being utilized to provide **evidentiary support** to rebut arguments made by Appellant in the Appeal Brief.

2,864,283	MANN	12-1958
5,326,200	SUZUKI	7-1994
3,495,636	SMITH	2-1970
2,482,620	HUCK	9-1949
376,134	BIRGE et al.	1-1888
5,562,135	BETH et al.	10-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 12, 15-17, and 20-21 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Pat. No. 5,533,845 (Glover)

Glover teaches a portable milling machine, the spindle of which can be considered a “router”, having a milling bit 61 secured to a chuck 53 (col. 4, lines 9-15, Figure 1). The bit 61 is ultimately attached to a frame 12, considered the claimed “platform”, which frame 12 is moved in the generally left/right direction shown in the top portion of Figure 1 along a “guide” track, located within subframe 30, via the turning of alignment wheel 19 (Figures 1, 5, and 6, also col. 3, lines 44-50, for example). Note that the subframe or “guide” 30 is affixed to the

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workpiece 10 via fasteners “drilled” into the workpiece (see Figures 1, 5, and col. 3, lines 32-43). Additionally, regarding the “vertical adjustment”, it is noted that alignment wheel 18 is mounted on the “platform” 12 for moving the “platform” and tool “vertically” as viewed in Figure 1 (see also col. 3, lines 44-59, for example).

Regarding claim 15, note that Glover specifically teaches that the tool is pneumatically operated (col. 4, lines 24-32).

Regarding claim 16, Glover specifically teaches a “speed adjustment” (col. 4, lines 58-60).

Specifically regarding claim 20, note that platform 12 has a protruding member that mates with the aforescribed “guide” track of the subframe 30 (see Figure 5, for example), which protruding member “bears” against and interfaces with said “guide” track.

Regarding claim 21, see Figure 1 and col. 4, lines 16-32, for example.

However, while Glover does teach the fasteners that penetrate into the workpiece as described above, Glover is silent about whether the fasteners are drilled all the way “through” the workpiece (noting that the Merriam Webster’s Collegiate Dictionary, 10th ed., defines “through” as “extending from one surface to another”).

However, it is noted that Glover’s device is able to be used with a variety of different workpieces (note that col. 3, lines 25-29, for example set forth a “selected workpiece” and then provide an example of such). It is further noted that 1) it does not appear to matter to the function of Glover’s device whether or not the fasteners extend all the way through the workpiece as long as they perform the salient attaching function, 2) that whether or not the fasteners extend all the way “through” the workpiece does not appear to affect the function of the

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present invention, so long the fasteners perform the salient attaching function, and that 3) whether or not the fasteners extend all the way “through” the workpiece appears to be dependent on the design factor of the length of the fasteners selected as well as on the particular workpiece used, i.e., if a workpiece is used that has a thickness less than the length of the fasteners selected by the designer of Glover’s device, then the fasteners will extend all the way “through” the device, and it is again noted that Glover’s device is usable with a variety of workpieces as described above.

Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have used whatever length of fasteners with Glover’s device as was desired or expedient on whatever thickness of workpiece as was desired or expedient (thus providing some circumstances where the fasteners extend “through” the workpiece) because Applicant has not disclosed that having the fasteners extend “through” the workpiece provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant’s invention to perform equally well with fasteners that don’t extend all the way through the workpiece because the actual fact that the fasteners extend all the way through the workpiece, per se, does not appear affect the function of Applicant’s invention so long as the fasteners perform the salient function of attaching the guide to the workpiece (which Glover’s fasteners do).

Therefore, it would have been an obvious matter of design choice to have modified Glover to have obtained the invention as specified in the claims.

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Claims 12, 17, and 20 are rejected under 35 U.S.C. 103(a) as being obvious over 5,106,243 (Hunt).

Hunt teaches a portable milling machine, the spindle unit 44 of which is considered a “router”. Note that the spindle unit 44 is affixed to a movable ram or “platform” 26, for example (see Figure 1), that moves along a dovetail slide 18 of a bed 12 (Figure 1, col. 2, lines 26-65, for example). The device has a “vertical adjustment” for adjusting the depth of cut of the milling cutter 68 (col. 3, lines 25-29, for example). Additionally, note that the bed plate 10 of the guiding device previously described is bolted to a workpiece surface (see col. 4, lines 18-22 and Figure 1), and thus Hunt teaches the guiding device that is fastened to the workpiece via fasteners or bolts that penetrate the workpiece surface.

Regarding claim 20, note that carriage block 24 serves as a “bearing” as claimed (see Figure 1, for example).

However, while Hunt does teach the fasteners that penetrate into the workpiece as described above, Hunt is silent about whether the fasteners are drilled all the way “through” the workpiece (noting that the Merriam Webster’s Collegiate Dictionary, 10th ed., defines “through” as “extending from one surface to another”).

However, it is noted that Hunt’s device is able to be used with a variety of different workpieces and that Hunt does not limit the use of the device to a particular type of workpiece. It is further noted that 1) it does not appear to matter to the function of Hunt’s device whether or not the fasteners extend all the way through the workpiece as long as they perform the salient attaching function, 2) that whether or not the fasteners extend all the way “through” the workpiece does not appear to affect the function of the present invention, so long the fasteners

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perform the salient attaching function, and that 3) whether or not the fasteners extend all the way “through” the workpiece appears to be dependent on the design factor of the length of the fasteners selected as well as on the particular workpiece used, i.e., if a workpiece is used that has a thickness less than the length of the fasteners selected by the designer of Hunt’s device (for example, a thickness less than the press platen 100 shown in Figure 6), then the fasteners will extend all the way “through” the device, and it is again noted that Hunt’s device is usable with a variety of workpieces as described above.

Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have used whatever length of fasteners with Hunt’s device as was desired or expedient on whatever thickness of workpiece as was desired or expedient (thus providing some circumstances where the fasteners extend “through” the workpiece) because Applicant has not disclosed that having the fasteners extend “through” the workpiece provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant’s invention to perform equally well with fasteners that don’t extend all the way through the workpiece because the actual fact that the fasteners extend all the way through the workpiece, per se, does not appear affect the function of Applicant’s invention so long as the fasteners perform the salient function of attaching the guide to the workpiece (which Hunt’s fasteners do).

Therefore, it would have been an obvious matter of design choice to have modified Hunt to have obtained the invention as specified in the claims.

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Claims 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Glover or Hunt as applied to claim 12 above.

Glover and Hunt each teaches all aspects of the claimed invention as described in the above rejection based thereon. However, regarding claim 13, both Glover and Hunt are silent about the degree of precision of the vertical adjustment. Additionally, regarding claim 19, both Glover and Hunt are silent about the material used for the guide.

Regarding the degree of precision of the vertical adjustment, it is noted that it is conventional and well-known in the machining art to utilize an “adjustment” having whatever degree of precision is required for machining a particular desired workpiece, depending on manufacturing tolerances of the workpiece, and a degree of precision within “one-thousandth of an inch” as claimed is also commonly applied. Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have made the vertical adjustments of either or both of Glover and/or Hunt the particular precision claimed because Applicant has not disclosed that utilizing the particular claimed precision provides an advantage, is used for a particular purpose, or solves a stated problem (note, for example, that Applicant in fact discloses that other precisions can be used, see page 9, for example).

Regarding the particular material for the guide, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used whatever known material as was desired or expedient, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a

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matter of obvious design choice. In re Leshin, 125 USPQ 416. See also Ballas Liquidating Co. v. Allied industries of Kansas, Inc. (DC Kans) 205 USPQ 331.

Claim 18, and alternatively, claim 17, is/are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Glover or Hunt as applied to claims 12 or to claims 12 and 17 above, and further in view of U.S. Pat. No. 3,133,339 (Ribich).

Either of Glover or Hunt teaches all aspects of the claimed invention as described in the above rejection based thereon.

Specifically regarding Glover, Glover is silent as to the specifics of the cutting tool, specifically teaching the “conventional cutting or milling bit 61” may “adopt a variety of configurations and be manufactured from a variety of materials depending on the nature of the workpiece 10” (see col. 4, lines 9-15, for example). Glover is silent about the diameter of the cutting tool, and about the number of flutes of the cutting tool. Additionally, while the cutting tool taught by Glover appears to be an end mill, Glover does not explicitly call it such, other than to say that the tool is a “conventional milling bit” as just described.

Additionally, regarding Hunt, likewise, Hunt generically teaches the use of a “milling cutter 68” (col. 4, line 27, for example) that appears to be an end mill, and is so considered since the device is used to make longitudinal cuts as described in columns 3 and 4, although Hunt does not explicitly call the tool such.

Ribich teaches an end mill (see col. 1, lines 8-10 and Figures 1-2, for example) having three flutes 15-17 (see Figures 1-2) and having a quarter-inch diameter (see the table located at col. 3, lines 40-50 and also see col. 4, lines 15-18, for example). Additionally, Ribich provides a

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teaching that the particular end mill shown in Figures 1-2 is of a configuration that gives a longer tool life than other end mills having differently configured cutting edges (col. 2, lines 7-9, for example, also see generally column 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the specific quarter-inch three-fluted end mill taught by Ribich for the generic milling cutter taught by either of Glover or Hunt for the purpose of providing a cutter capable of producing either continuous or discontinuous chips, as desired, thereby providing a cutter that has a longer life (col. 1-2, specifically col. 2, lines 7-9 of Ribich).

Claims 1-5, 7-11, 14, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glover as applied to claims 12-13, and 15-21 above, and further in view of either of U.S. Pat. No. 5,503,203 (Stornetta) or U.S. Pat. No. 3,837,383 (Ko), for example.

Glover teaches all aspects of the claimed invention as described in the above rejection based thereon. Additionally, regarding the “grips” of claim 7, note that there are many areas/structures on Glover’s device that can be considered the claimed “grips”. For example, the alignment wheels 18 and 19 each have a gripping handle protruding therefrom, see Figure 6, for example.

However, while Glover does teach the fasteners that penetrate into the workpiece as described above, Glover is silent about whether the fasteners are drilled all the way “through” the workpiece (noting that the Merriam Webster’s Collegiate Dictionary, 10th ed., defines “through” as “extending from one surface to another”). Also, Glover does not teach a vacuum fitting for removing the machined debris. Additionally, regarding claim 2, Glover is silent about the degree

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of precision of the vertical adjustment. Additionally, regarding claims 8-9, Glover is silent about the material used for the guide.

However, regarding the fasteners extending “through” the workpiece, it is noted that Glover’s device is able to be used with a variety of different workpieces (note that col. 3, lines 25-29, for example set forth a “selected workpiece” and then provide an example of such). It is further noted that 1) it does not appear to matter to the function of Glover’s device whether or not the fasteners extend all the way through the workpiece as long as they perform the salient attaching function, 2) that whether or not the fasteners extend all the way “through” the workpiece does not appear to affect the function of the present invention, so long the fasteners perform the salient attaching function, and that 3) whether or not the fasteners extend all the way “through” the workpiece appears to be dependent on the design factor of the length of the fasteners selected as well as on the particular workpiece used, i.e., if a workpiece is used that has a thickness less than the length of the fasteners selected by the designer of Glover’s device, then the fasteners will extend all the way “through” the device, and it is again noted that Glover’s device is usable with a variety of workpieces as described above.

Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have used whatever length of fasteners with Glover’s device as was desired or expedient on whatever thickness of workpiece as was desired or expedient (thus providing some circumstances where the fasteners extend “through” the workpiece) because Applicant has not disclosed that having the fasteners extend “through” the workpiece provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art,

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furthermore, would have expected Applicant's invention to perform equally well with fasteners that don't extend all the way through the workpiece because the actual fact that the fasteners extend all the way through the workpiece, per se, does not appear affect the function of Applicant's invention so long as the fasteners perform the salient function of attaching the guide to the workpiece (which Glover's fasteners do).

Therefore, it would have been an obvious matter of design choice to have modified Glover to have obtained the invention as specified in the claims.

However, regarding the vacuum fitting, use of a "vacuum fitting" for collecting machining debris is well-known in the machine tool art as taught by Stornetta wherein a router (including motor 51, base 53, and bit 52, see Figure 2, for example) has a vacuum attachment wherein a vacuum hose is coupled to the dust hood 55 (col. 4, line 56 through col. 5, line 3, for example).

Alternatively, Ko also teaches a "vacuum fitting", including dust collector housing 21, connected to a machining device (see Figures 1-2 and col. 3, lines 20-37) such that dust or work particles will be removed from tubular element 45 via suction hose 47 (col. 4, lines 34-40). Ko teaches that such a vacuum fitting is desirable so as to protect the health of the operator of the machine and other nearby workers, as well as to increase operator safety and improve machine operation (see col. 1, lines 1-34, for example).

Therefore, the use of such attachment (as that taught by either of Stornetta or Ko) in the device of Glover would be obvious to one possessing ordinary skill in the art to achieve the benefits that would accrue thereto as set forth in both Stornetta and Ko (see Stornetta, col. 6,

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lines 9-16, for example, and Ko, col. 1, lines 1-34, for example) such as reduced hazard to the operator.

Regarding the degree of precision of the vertical adjustment, it is noted that it is conventional and well-known in the machining art to utilize an “adjustment” having whatever degree of precision is required for machining a particular desired workpiece, depending on manufacturing tolerances of the workpiece, and a degree of precision within “one-thousandth of an inch” as claimed is also commonly applied. Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have made the vertical adjustment of Glover the particular precision claimed because Applicant has not disclosed that utilizing the particular claimed precision provides an advantage, is used for a particular purpose, or solves a stated problem (note, for example, that Applicant in fact discloses that other precisions can be used, see page 9, for example).

Regarding the particular material for the guide, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used whatever known material as was desired or expedient, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. See also Ballas Liquidating Co. v. Allied industries of Kansas, Inc. (DC Kans) 205 USPQ 331.

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Claim 6 and alternatively claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glover in view of either Stornetta or Ko as applied to claim 6 above, and further in view of Ribich.

Glover in view of either Stornetta or Ko teaches all aspects of the claimed invention as described in the above rejection based thereon.

Glover is silent as to the specifics of the cutting tool, only specifically teaching the “conventional cutting or milling bit 61” may “adopt a variety of configurations and be manufactured from a variety of materials depending on the nature of the workpiece 10” (see col. 4, lines 9-15, for example). Glover is silent about the diameter of the cutting tool, and about the number of flutes of the cutting tool. Additionally, while the cutting tool taught by Glover appears to be an end mill, Glover does not explicitly call it such, other than to say that the tool is a “conventional milling bit” as just described.

Ribich teaches an end mill (see col. 1, lines 8-10 and Figures 1-2, for example) having three flutes 15-17 (see Figures 1-2) and having a quarter-inch diameter (see the table located at col. 3, lines 40-50 and also see col. 4, lines 15-18, for example). Additionally, Ribich provides a teaching that the particular end mill shown in Figures 1-2 is of a configuration that gives a longer tool life than other end mills having differently configured cutting edges (col. 2, lines 7-9, for example, also see generally column 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the specific quarter-inch three-fluted end mill taught by Ribich for the generic milling cutter taught by Glover in view of either Stornetta or Ko for the purpose of providing a cutter capable of producing either continuous or discontinuous chips, as

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desired, thereby providing a cutter that has a longer life (col. 1-2, specifically col. 2, lines 7-9 of Ribich).

(10) Response to Argument

Claims 12, 15-17, and 20-21, rejected under 35 U.S.C. §103(a) as being obvious over U.S. Pat. No. 5,533,845 to Glover (hereinafter “Glover”)

Appellant has asserted the following (page 7 of the brief, which is page 11/28 of the scanned brief document):

The rejection of at least Claim 12 is improper because Glover does not teach or suggest a guide fastened to sheet metal by fasteners drilled through the sheet metal, nor does Glover teach or suggest a router as claimed.

Firstly, with respect to claim 12, Examiner is reproducing the text of claim 12 below with reference numbers or support locations in the Glover reference provided in parenthesis for each claim feature:

Claim 12 (Original). 12. A sheet metal router apparatus (the portable milling machine 2 shown in Figure 1 is a “router apparatus”), comprising:

a guide (30, see Figure 1 noting that the milling bit 62 is moved along the “guide” 30 in at least the horizontal direction of the shown arrow, also col. 3, lines 44-59), fastened to the sheet metal (Glover generically teaches a workpiece 10, but does not explicitly teach “sheet metal” nor the thickness of the workpiece) by fasteners (at attachment sites 32, 33, see Figures 1, 5, and col. 3, lines 32-43) drilled through the sheet metal (while Glover is silent as to the specific thickness of the workpiece and thus does not explicitly teach that the fasteners extend completely “through” the workpiece, Glover does teach the feature of the fasteners at least extending into the workpiece, again, see Figures 1, 5, and col. 3, lines 32-43);

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a platform (12), mounted on the guide (30, see Figure 5); and

a router (the spindle that rotates the milling tool bit 61, see at least col. 3, line 65 through col. 4, line 15) having a vertical adjustment (alignment wheel 18 moves the platform 12 vertically as viewed in Figure 1 and described in col. 3, lines 44-59), mounted on the platform (12, see Fig. 1), wherein an operator adjusts the router vertical adjustment (18) for a desired depth-of-cut (note that the vertical movement of the tool bit 61 via the wheel 18 adjusts the “depth” of cut in the vertical direction, though it is also noted if the claim were amended so that the depth of cut was being adjusted in the axial direction of the tool bit that axial displacement device 14 is mounted on the frame 12 and moves the tool axially, see Figure 1 and col. 3, lines 33-51) and moves the platform (12) continuously along the guide (30) to make a desired cut (see Figure 1, also Figure 8, noting the of the platform 12 “along” the guide 30 by at least the actuation of hand wheel 19 as described in col. 3, lines 44-51, for example) .

Re Appellant’s assertion that Glover “does not teach a guide fastened to the sheet metal by fasteners drilled through the sheet metal” (where it is agreed that “through” means “extending from one surface to another” as recited from the Merriam Webster’s Collegiate Dictionary, 10th ed.), firstly, it is noted that the rejection in question is based on 35 USC 103, and that Examiner did not rely on Glover to teach this feature, but rather, Examiner indicated that it would be an obvious matter of design choice to make the length of the fasteners used with Glover’s device whatever length as was desired or expedient with whatever thickness of workpiece as was desired or expedient, and provided reasons why such would be a matter of obvious design choice.

Regarding these reasons, Examiner noted that Glover's device is able to be used with a variety of different workpieces (note that col. 3, lines 25-29, for example set forth a "selected workpiece" and then provide an example of such).

Examiner further noted that it does not appear to matter to the function of either Glover's device or the device of the present invention whether or not the fasteners extend all the way through the workpiece as long as they perform the salient attaching function. In other words, it appears that the router apparatus of the present invention could be attached via the fasteners 58 to whatever thickness of workpiece was desired to thereby machine whatever thickness of workpiece was desired, and likewise, it appears that the router apparatus of Glover's invention could be attached via the described fasteners (col. 3, lines 32-43, Figures 1, 5) to whatever thickness of workpiece of workpiece was desired.

Whether or not the fasteners extend all the way "through" the workpiece appears to be dependent on the design factor of the length of the fasteners selected as well as on the thickness of the particular workpiece used. If a workpiece is used that has a thickness less than the length of the fasteners selected by Glover's device, then the fasteners will extend all the way "through" the device, and it is again noted that Glover's device is usable with a variety of workpieces as described above. In other words, the difference between the presently-claimed apparatus and the apparatus taught by Glover lies in the intended use of the present invention to be used with "sheet metal" such that the guide of the router apparatus is fastened to the sheet metal by "fasteners drilled through the sheet metal". Note that the sheet metal or workpiece itself is not part of the claimed invention.

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Additionally regarding the reasons why the selection of a length of fastener and/or thickness of workpiece such that the fastener extends “through” the workpiece would be a matter of obvious design choice, Examiner further noted that Applicant has not disclosed that having the fasteners extend “through” the workpiece provides an advantage, is used for a particular purpose, or solves a stated problem. Note that this feature (of the fasteners 58 extending “through the workpiece”) is not even shown in the drawings, and that there is indeed an objection to the drawings under 37 CFR 1.83(a) that is pending for this claimed feature not being shown.

One of ordinary skill in the art, furthermore, would have expected Applicant’s invention to perform equally well with fasteners that don’t extend all the way through the workpiece because the actual fact that the fasteners extend all the way through the workpiece, per se, does not appear affect the function of Applicant’s invention so long as the fasteners perform the salient function of attaching the guide to the workpiece (which Glover’s fasteners do). Note, for example, that **without changing the structure of the router apparatus of the present invention one iota**, it would appear that the guide 62 of the present invention could be attached to a workpiece of a thickness such that the fasteners do not extend all the way therethrough by, for example, providing tapped or threaded holes that are not through-holes in the workpiece and threading the fasteners 58 into these blind (non-through) holes..

Appellant has further asserted (page 12/28 of the brief) the following:

Even if one were to construe the workpiece of Glover as sheet metal, Figs. 1, 4, and 16 clearly show that Glover’s platform 30 is mounted to the workpiece via corresponding attachment sites 33, very thick bosses, such that fasteners through holes 32 and bosses 33 are not drilled through workpiece 10.

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Again, it is noted that Glover was not relied upon to teach the feature of the fasteners extending all the way through a sheet metal workpiece, and also, it is noted that regardless of the thickness of the bosses 33, Glover does not explicitly say whether or not the fasteners extend all the way “through” the bosses and the rest of the workpiece (see Figures 1 and 5, for example), i.e., Glover is silent about the length of the fasteners and about the workpiece thickness, and thus, about whether the fasteners extend all the way therethrough. In other words, just because the shown attachment sites or bosses 33 are shown as “thick” (as described by appellant), that in and of itself is not a teaching that the fasteners don’t or can’t extend all the way therethrough or all the way through the workpiece as a whole. Examiner again notes that Glover does teach that the machining device can be used with a variety of different workpieces (col. 3, lines 25-29 sets forth a “selected workpiece” and then provides as an example thereof an aircraft wing (states “e.g., an aircraft wing”), but does not limit the “selected workpiece” to an “aircraft wing”.

Appellant further asserts the following (page 12/28):

Furthermore, citing Glover in this manner is impermissible hindsight, combining the present invention with a reference in order to find the claimed application obvious. *In re Deuel*, 34 U.S.P.Q.2d 1210 (Fed. Cir. 1995) (reversing rejections for obviousness because of the use of impermissible hindsight). Glover does not describe or suggest at least this limitation of Claim 12.

It appears that Appellant is arguing that because Glover does not teach the limitation in question, hindsight must therefore be involved to arrive at the present invention as set forth in the claims. However, Examiner notes that if the limitation in question were taught by Glover, Glover would have been applied to the claims under 35 USC 102(b) rather than under 35 USC 103 (a). Examiner has provided a line of reasoning as to why the modifications would have been obvious. The examiner recognizes that obviousness can only be established by combining or

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modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to so modify Glover would lie in the knowledge available to one having ordinary skill in the art, noting that if presented with a router apparatus as taught by either of Glover or the present invention, one having ordinary skill in the art would have the knowledge available to attach that router apparatus to whatever workpiece it was that the one of ordinary skill in the art wanted to machine, including a workpiece that is thin enough that the fasteners extend therethrough.

Regarding Appellants' assertion that "Glover does not teach a router", and that neither the portable milling machine nor the spindle portion thereof can be considered a "router", it is noted (as it was in the final rejection mailed 6/24/04) that the Merriam-Webster's Collegiate Dictionary, 10th ed., defines a "router" as "a machine with a revolving vertical spindle and cutter for milling out the surface of wood or metal". Thus, the spindle of Glover in combination with the cutter thereof meet the dictionary definition of a "router".

Appellant points to the device taught by U.S. Pat. No. 5,503,203 to Stornetta as teaching a "router". Examiner does not dispute that Stornetta teaches a router, but this does not change the fact that the device taught by Glover also constitutes a "router". It is noted that Appellant's specification has not provided any specific definition of the term "router" that would preclude the term from being given its plain meaning. See MPEP § 2111.01 [R-3].

Examiner notes that “routers” take on a wide variety of forms, including the form shown by Stornetta, but also in the forms shown by each of U.S. Pat. No. 2,864,283 to Mann, 5,326,200 to Suzuki, 3,495,636 to Smith, 2,482,620 to Huck, or 376,134 to Birge et al., noting that the titles of each of these devices indicates that the device is a “router” or “routing machine”, and that the figures show routers that are of vastly different configuration to the router taught by Stornetta. The common element between each of these routers and the router taught by Stornetta is that all have a revolving spindle and cutter for milling a workpiece, in accordance with the plain meaning of the term router. Examiner further notes that U.S. Pat. No. 5,562,135 to Beth et al., is provided as further evidence of the wide variety of configurations of routers, noting that Beth et al. explicitly teaches that routers can be horizontal (see col. 1, lines 4-14, and especially lines 9 and 14, for example). Thus, if Appellant is attempting to assert that there is some sort of unspecified special art-recognized meaning for the term “router” that would preclude the machining apparatus taught by Glover from being considered a “router” (i.e., because the machining apparatus taught by Glover is different in appearance than the machining apparatus taught by Stornetta), Examiner provides each of Mann, Suzuki, Smith, Huck, Birge et al., and Beth et al. as evidentiary showings (**not relied upon as a basis of rejection**) that the art-recognized definition of “router” is broader than just a router similar to that taught by Stornetta.

Claim 15

Claim 15 depends from claim 12, and further recites that the “router is selected from the group consisting of a pneumatic router and an electric router”.

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Appellant does not appear to take issue with the fact that the machining device taught by Glover is pneumatically operated, but instead provides a number of assertions related to appellant's belief that Glover's machining device cannot be considered a router.

Insofar as Appellant's assertions related to Glover's device not being a "router" are repeated, the responses to those assertions presented immediately prior to this section still apply. Examiner will address any new arguments related to this assertion.

Firstly, Appellant appears to be of the opinion that because Glover's device is described by Glover as a "milling machine", it cannot be considered a "router". However, this is not persuasive. Examiner notes that the terms "milling" and "routing" are often used interchangeably in the art. As evidence of this fact, Examiner notes that the Mann reference (U.S. Pat. No. 2,864,283) mentioned previously explicitly teaches a "router" that utilizes spindle 14 to rotate an "ordinary milling cutter" 15 to machine workpiece 16 (see col. 1, lines 43-54, and especially note that line 44 calls the device a "router" and that line 52 indicates that "ordinary milling cutter" 15 is used).

Again, the plain meaning of "router" as "a machine with a revolving vertical spindle and cutter for milling out the surface of wood or metal" is still met by the spindle revolving a cutting tool taught by Glover. It is further noted that the plain meaning of the term "router" includes reference to a "milling" operation.

Appellant also asserts the following:

A router implies some amount of portability and convenience, as well as a single degree of freedom, as shown in the references which specifically mention routers. For example, Ko discusses conventional portable routers and depicts a router mounted to a table and used with a template so that the operator can guide the router around the template to cut the desired pattern in a door. Ko, col. 5, lines 42-51.

Firstly, it appears that Appellant is asserting that the machining device taught by Glover cannot be considered a “router” because it is not portable. However, Examiner notes that the machining device taught by Glover is indeed portable, as otherwise, how would it be moved to be attached to various workpiece sites, i.e., the machining device taught by Glover is not just attached to a single workpiece at the attachment sites 32, 33, used to machine that workpiece, and then left there attached to the workpiece forever. Furthermore, it is noted that the dictionary definition of “router” provided previously does not require any amount of portability to be present for an item to meet the plain meaning of the term “router”. Finally, it is noted that all of the routers taught by each of the aforementioned evidentiary references Mann, Suzuki, Smith, Huck, Birge et al., and Beth et al are explicitly taught by each of the references in question as being “routers” or “routing devices” (see the titles thereof of each of Mann, Suzuki, Smith, Huck, and Birge et al, and see col. 1, lines 4-14 of Beth et al.). Note that the routers or routing devices of each of these are structured and configured with much less portability than the portable router device taught by, for example, Stornetta, (see the figures of each of these references -- for example, the machine tool as a whole that is shown in Figure 1 of Mann is a router, or alternatively, merely the spindle 14 and cutting tool 15 of Mann can be considered a “router” in accordance with the dictionary definition) thus providing further evidentiary support that degree of portability is not a factor in determining whether a device constitutes a “router”.

In addition to the comment quoted above, Appellant makes a number of assertions regarding the “single degree of freedom” of a router. Specifically, Appellant asserts the following:

The portability of the router gives the operator the freedom to make the desired cut using the single degree of freedom, or height adjustment, in Applicants' invention.

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Embodiments of the Applicants' invention use a special guide and platform to take advantage of the portability of the router to make a long cut. When the rejection states that the router of Applicant's own invention has more than a single degree of freedom," Office Action, p. 15, lines 8-12, the rejection uses Applicants' own invention against him, which is impermissible hindsight. *In re Deuel*, 34 U.S.P.Q.2d 1210 (Fed. Cir. 1995) (reversing rejections for obviousness because of the use of impermissible hindsight).

In response to Appellant's assertion that a "router implies...a single degree of freedom", Examiner again notes (as Examiner noted in the final rejection mailed 6/24/04, page 15, second paragraph) that Appellant's own invention has more than a single degree of freedom since it can move in a direction orthogonal to the direction of the tool axis along the guide 62 (in addition to the movement in the direction of the tool axis by the claimed "vertical adjustment" 73, 75). Thus it appears that the router of Appellant's own invention does not constitute a "router" under the definition argued by Appellant.

Appellant's assertions that by the Examiner pointing out that Appellant's own invention doesn't meet Appellant's argued definition of a router, the Examiner is somehow using "impermissible hindsight" are unclear. It appears that Appellant is attempting to establish that the machining device taught by Glover cannot be considered a "router", in this particular instance, by implying that since Glover's machining device includes more than a single degree of freedom, it cannot be considered a router. There is no hindsight reconstruction involved in pointing out that if a "router" is only limited to a single degree of freedom, then Appellant's device can't be considered a "router" either, because it has more than one degree of freedom as described previously.

Examiner further notes that neither the present claim language nor the plain meaning of the term "router" (in the absence of any special definition of the term "router" being provided in the specification) require a router device having only a single degree of freedom. Thus, there

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appears to be nothing precluding the machining device taught by Glover from, in this regard also, being considered a “router”.

Re the absence of any limitation in the claim regarding the single degree of freedom of a router, it is noted that the features upon which applicant relies (i.e., the feature of a router having a single degree of freedom only) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, it is noted that to provide such a limitation would appear to constitute new matter since, as noted previously, Appellant’s router includes more than one degree of freedom.

Claim 16

Claim 16 depends from claim 12 and further adds a “speed adjustment” to the router. Appellant does not appear to take issue with the fact that Glover teaches a “speed adjustment”, but appears to again only take issue with the fact that Appellant does not consider the “milling machine” taught by Glover to be a “router” (see pages 14/28 -15/28). However, this issue has been addressed extensively above, and Examiner’s response to that argument(s) about why the “milling machine” taught by Glover can and is considered to be a “router” equally applies here.

Claim 17

Claim 17 depends from claim 12 and further adds “an end mill attached with the router”.

Appellant asserts the following:

Claim 17 is also rejected under 35 U.S.C§ 103(a) as being obvious over U.S. Pat. No. 5,533,845 to John Glover (“Glover”). The rejection of Claim 17 under Glover does not cite any specific passage for the claim limitation of an end mill attached to the router. Therefore, the rejection does not make out a prima facie case of obviousness. The final rejection of dependent Claim 17 under 35 U.S.C. § 103(a) is error (sic). Appellants

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request the Board to reverse the rejection under 35 U.S.C. §103(a) of Claim 17 over Glover.

However, Examiner notes that as pointed out in the final rejection (page 3, last paragraph), Glover explicitly teaches a milling bit 61 attached to tool chuck 53 of the spindle (see Figure 1 and at least col. 4, lines 9-15).

If Appellant is implying that the milling bit 61 is not considered to be an “end mill” for some reason, Examiner notes that if it didn’t have cutting edges on the “end” thereof (see Figure 1), it wouldn’t be able to function as described by Glover to machine a workpiece with the end thereof, nor would there be any need for there to be the helical flutes shown in Figure 1, typically used to convey scrap or chips away from the cutting location at the end of the tool.

Claim 20

Claim 20 depends from claim 12, and further adds “at least one bearing mounted on the platform and interfacing with the guide”.

Appellant has asserted the following:

The rejection does not state, and Glover does not describe or suggest that subframe 30 is a “bearing.” Applicants have claimed a bearing mounted on the platform and interfacing with the guide. While not importing limitations from the specification, it is clear from Applicants’ Fig. 5, numeral 66, that a bearing may be an anti-friction type rotary bearing, for the platform to interface with, so that the platform, and thus the router, can move along the guide. Glover does not suggest that subframe 30 has any antifriction or “bearing” qualities. Glover states that his machine includes an attachment subassembly 30 which includes one or more attachment sites through which subassembly 30 may be secured” to the workpiece. Glover, col. 3, lines 33-36.

In the final rejection, Examiner noted that “platform 12 has a protruding member that mates with the aforescribed ‘guide’ track of the subframe 30 (see Figure 5, for example), which protruding member ‘bears’ against and interfaces with said ‘guide track’”. This

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Further note that Merriam-Webster's Collegiate Dictionary, 10th ed., provides the definition of a bearing as "a machine part in which another part (as a journal or pin) turns or **slides**". Note that the dovetail arrangement taught by Glover forms a **sliding** bearing arrangement in that the male dovetail slides in the female dovetail, and thus meets the claim language of claim 20.

Appellant further asserts the following:

Subframe 30 is attached to the workpiece and will not move. Subframe 30 is an interface, but cannot be a bearing mounted on the platform. Glover does not describe or suggest at least this limitation of Claim 20 which is therefore not obvious over Glover.

It appears that Appellant may have misunderstood the previous rejection of claim 20. It is noted that Examiner did not assert that subframe 30 was moveable with respect to the workpiece once attached thereto, and with respect to the claimed "bearing mounted on the platform and interfacing with the guide", Examiner did not assert that subframe 30 was intended to constitute such a bearing. Instead, as described previously, the male dovetail member protruding from movable platform 12 was asserted by Examiner to be the claimed "bearing" mating with the guide 30 at the female dovetail or guiding portion thereof. Thus, claim 20 is also met by Glover.

Claim 21

Claim 21 depends from claim 15 (which depends from claim 12, claims 12 and 15 both having been separately addressed above), and further adds "air fittings attached to the platform for receiving air from an air supply and for delivering air to the pneumatic router".

Appellant does not appear to take issue with the fact that Glover teaches the "air fitting" claimed, but again appears to take issue with calling the "milling machine" taught by Glover a

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“router”. However, this issue has been addressed extensively above, and no further specific arguments as to why the “milling machine” taught by Glover couldn’t be considered a “router” were presented with respect to claim 21. Insofar as the arguments above re this issue are relevant to claim 21, the above responses to those arguments also apply.

Claims 12, 17, and 20, rejected under 35 U.C.C. § 103(a) as being obvious over U.S. Pat. No. 5,106,243 to Christopher Hunt (“Hunt”)

Firstly, with respect to claim 12, Examiner is reproducing the text of claim 12 below with reference numbers or support locations in the Hunt reference provided in parenthesis for each claim feature:

Claim 12 (Original). 12. A sheet metal router apparatus (the portable milling machine shown in Figure 1 is a “router apparatus”), comprising:

a guide (male dovetail slide 18 of bed 12, in combination with bedplate 10 , see Figure 1 and col. 2, lines 26-65, for example), fastened to the sheet metal (Hunt teaches a workpiece 100, but does not explicitly teach “sheet metal” nor the thickness of the workpiece) by fasteners (bolts extending through element 10 that penetrate the workpiece surface, see Figures 1, 3, 6, and col. 4, lines 18-22) drilled through the sheet metal (while Hunt is silent as to the specific thickness of the workpiece and thus does not explicitly teach that the fasteners extend completely “through” the workpiece, Hunt does teach the feature of the fasteners at least extending into the workpiece, again, see Figures 1, 3, 6, and col. 4, lines 18-22);

a platform (26), mounted on the guide (18+12+10, see Figure 1); and

a router (the spindle unit 44 that rotates the cutter 68, see at least Figure 1) having a vertical adjustment (note that hand wheel 70 is used to adjust the depth of cut in the vertical or Z-

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direction, see Figure 1 and col. 3, lines 25-29), mounted on the platform (26, see Fig. 1), wherein an operator adjusts the router vertical adjustment (via hand wheel 70 as described previously) for a desired depth-of-cut (note that the vertical movement of the cutter 68 via the wheel 18 adjusts the “depth” of cut in the vertical direction) and moves the platform (26) continuously along the guide (18+12+10) to make a desired cut (see at least Figure 1, noting that “platform” 26 is moved along leadscrew 16 along dovetail guide portion 18 via either or motor 92 or hand wheel 96 as described in at least col. 2, lines 44-48 and col. 3, lines 48-68, for example) .

Claims 12 and 17

Appellant asserts that Hunt “does not describe or suggest ‘a guide, fastened to the sheet metal by fasteners drilled through the sheet metal’” as set forth in claim 12. Examiner does not disagree that Hunt does not explicitly teach this feature, nor was Hunt relied upon to explicitly teach this feature. Note that the rejection in question is an obviousness-type rejection rather than one of anticipation. Examiner indicated that it would be an obvious matter of design choice to make the length of the fasteners used with Glover’s device whatever length as was desired or expedient with whatever thickness of workpiece as was desired or expedient, and provided reasons why such would be a matter of obvious design choice.

Examiner’s rejection stated the following:

However, while Hunt does teach the fasteners that penetrate into the workpiece as described above, Hunt is silent about whether the fasteners are drilled all the way “through” the workpiece (noting that the Merriam Webster’s Collegiate Dictionary, 10th ed., defines “through” as “extending from one surface to another”).

However, it is noted that Hunt’s device is able to be used with a variety of different workpieces and that Hunt does not limit the use of the device to a particular type of workpiece. It is further noted that 1) it does not appear to matter to the function of

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Hunt's device whether or not the fasteners extend all the way through the workpiece as long as they perform the salient attaching function, 2) that whether or not the fasteners extend all the way "through" the workpiece does not appear to affect the function of the present invention, so long the fasteners perform the salient attaching function, and that 3) whether or not the fasteners extend all the way "through" the workpiece appears to be dependent on the design factor of the length of the fasteners selected as well as on the particular workpiece used, i.e., if a workpiece is used that has a thickness less than the length of the fasteners selected by the designer of Hunt's device (for example, a thickness less than the press platen 100 shown in Figure 6), then the fasteners will extend all the way "through" the device, and it is again noted that Hunt's device is usable with a variety of workpieces as described above.

Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have used whatever length of fasteners with Hunt's device as was desired or expedient on whatever thickness of workpiece as was desired or expedient (thus providing some circumstances where the fasteners extend "through" the workpiece) because Applicant has not disclosed that having the fasteners extend "through" the workpiece provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with fasteners that don't extend all the way through the workpiece because the actual fact that the fasteners extend all the way through the workpiece, per se, does not appear affect the function of Applicant's invention so long as the fasteners perform the salient function of attaching the guide to the workpiece (which Hunt's fasteners do).

Therefore, it would have been an obvious matter of design choice to have modified Hunt to have obtained the invention as specified in the claims.

Applicant has not presented any line of reasoning as to why it would not have been a matter of obvious design choice to so modify the teachings of Hunt.

Regarding these reasons why Examiner noted that it would have been a matter of obvious design choice to so modify the teachings of Hunt, Examiner noted that Hunt's device is able to be used with a variety of different workpieces (note that col. 2, lines 25-30, for example set forth a generic "component of the work to be machined" and that Hunt does not specifically limit the workpiece to any particular and specific workpiece).

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Examiner further noted that it does not appear to matter to the function of either Hunt's device or the device of the present invention whether or not the fasteners extend all the way through the workpiece as long as they perform the salient attaching function. In other words, it appears that the router apparatus of the present invention could be attached via the fasteners 58 to whatever thickness of workpiece was desired to thereby machine whatever thickness of workpiece was desired, and likewise, it appears that the router apparatus of Hunt's invention could be attached via the described fasteners to whatever thickness of workpiece of workpiece was desired.

Whether or not the fasteners extend all the way "through" the workpiece appears to be dependent on the design factor of the length of the fasteners selected as well as on the thickness of the particular workpiece used. If a workpiece is used that has a thickness less than the length of the fasteners selected by Hunt's device, then the fasteners will extend all the way "through" the device, and it is again noted that Hunt's device is usable with a variety of workpieces as described above. In other words, the difference between the presently-claimed apparatus and the apparatus taught by Hunt lies in the intended use of the present invention to be used with "sheet metal" such that the guide of the router apparatus is fastened to the sheet metal by "fasteners drilled through the sheet metal". Note that the sheet metal or workpiece itself is not part of the claimed invention.

Additionally regarding the reasons why the selection of a length of fastener and/or thickness of workpiece such that the fastener extends "through" the workpiece would be a matter of obvious design choice, Examiner further noted that Applicant has not disclosed that having the fasteners extend "through" the workpiece provides an advantage, is used for a particular

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purpose, or solves a stated problem. Note that this feature (of the fasteners 58 extending “through the workpiece”) is not even shown in the drawings, and that there is indeed an objection to the drawings under 37 CFR 1.83(a) that is pending for this claimed feature not being shown.

One of ordinary skill in the art, furthermore, would have expected Applicant’s invention to perform equally well with fasteners that don’t extend all the way through the workpiece because the actual fact that the fasteners extend all the way through the workpiece, per se, does not appear affect the function of Applicant’s invention so long as the fasteners perform the salient function of attaching the guide to the workpiece (which Hunt’s fasteners do). Note, for example, that **without changing the structure of the router apparatus of the present invention one iota**, it would appear that the guide 62 of the present invention could be attached to a workpiece of a thickness such that the fasteners do not extend all the way therethrough by, for example, providing tapped or threaded holes that are not through-holes in the workpiece and threading the fasteners 58 into these blind (non-through) holes, i.e., the **structure** of the present invention appears to be identical to that taught by Hunt, regardless of whether or not Hunt explicitly teaches whether or not the fasteners extend through the workpiece.

Claim 20

Claim 20 depends from claim 12 and further adds “at least one bearing mounted on the platform and interfacing with the guide”.

Appellant has asserted the following:

Claim 20 is also rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Pat. No. 5,106,243 to Christopher Hunt (“Hunt”). The rejection states that carriage block 24 serves as a “bearing,” and citing Fig. 1 of Hunt. Office Action, p. 6, lines 11-12. Applicants have claimed a bearing mounted on the platform and interfacing with the

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guide. While not importing limitations from the specification, it is clear from Applicants' Fig. 5, numeral 66 that a bearing may be an anti-friction type rotary bearing, for the platform to interface with, so that the platform, and thus the router, can move along the guide. Hunt teaches that carriage block 24 is driven along dovetail slide 18. Hunt, col. 2, lines 44-48.

In the final rejection, Examiner noted that "carriage block 24 serves as a 'bearing' as claimed (see Figure 1, for example)". Note that

Regardless of what is shown in the Figures of Appellant's drawings (Examiner believes Applicant meant to reference Figure 8 rather than Figure 5 as no element 66 is shown in Figure 5), the claim language does not call for any specific bearing, such as the argued "anti-friction type rotary bearing" or some bearing having "anti-friction properties". Thus, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the bearing is an "anti-friction type rotary bearing" or that the bearing has "anti-friction properties") are not recited in the rejected claim 20. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

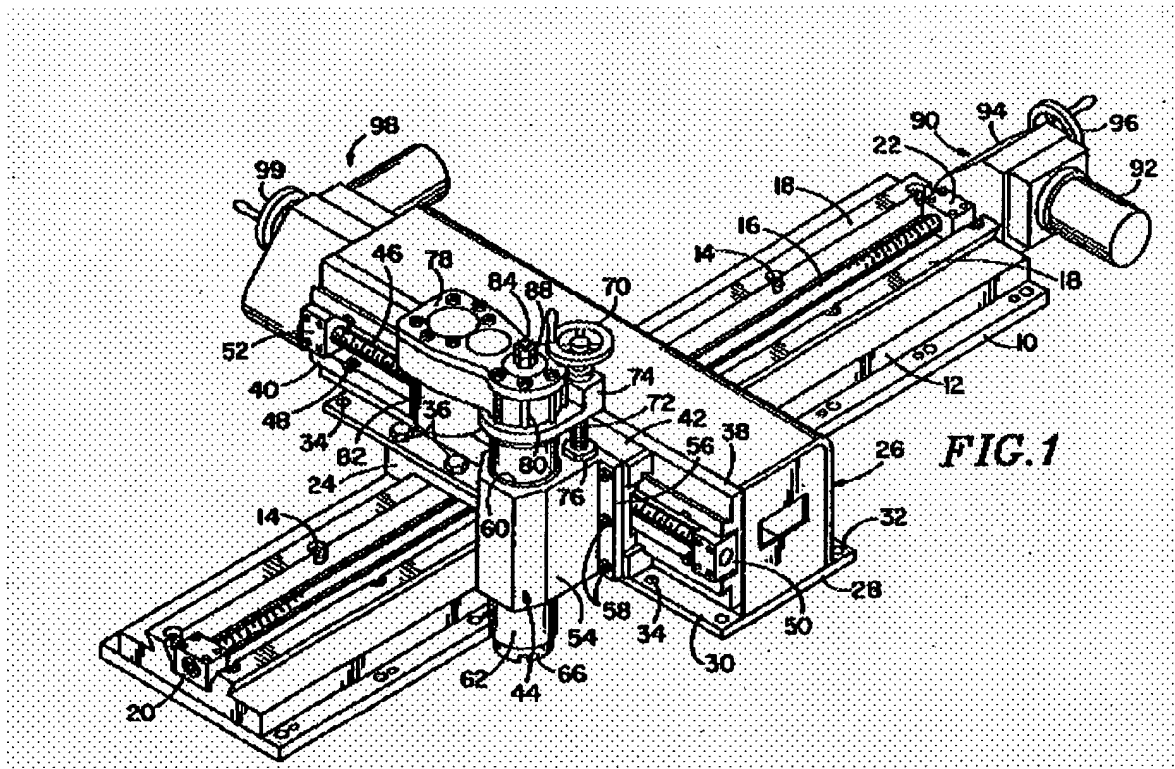
Further note that Merriam-Webster's Collegiate Dictionary, 10th ed., provides the definition of a bearing as "a machine part in which another part (as a journal or pin) turns or **slides**". Note that the dovetail arrangement taught by Hunt wherein "bearing" 24 interfaces with dovetail guide portion 18 forms a **sliding** bearing arrangement in that the female dovetail of "bearing" 24 slides over the male dovetail 18 as the "platform" 26 moves along lead screw 16 (see Figure 1), and thus meets the claim language of claim 20.

Appellant has also asserted the following:

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There is no suggestion that carriage block 24 is a “bearing” as recited in Claim 20. A fairer reading of Hunt with regard to the Claim 20 is that carriage block 24 performs the function of platform 64 in the present application, with bearings 66 mounted on the platform and interfacing with the guide. Hunt does not describe or suggest at least this limitation of Claim 20 which is therefore not obvious over Hunt. The rejection does not make out a prima facie case of obviousness. The final rejection of Claim 20 under 35 U.S.C. 5 103(a) in view of Hunt is error (sic). Appellants request the Board to reverse the rejection under 35 U.S.G. 5 103(a) of Claim 20 in view of Hunt.

However, it is unclear why it would be a “fairer reading” of Hunt to call “carriage block” 24 the platform rather than the “bearing”. Examiner notes that the carriage block 24 is fixedly attached to the member 26 via bolts 36 (see Figure 1 below), and thus the carriage block 24 and member 26 move together along the guide portion 18. Thus, “bearing” 24 is “mounted on” the “platform” via bolts 36 and “interfaces” with the guide portion 18 of guide 18+10+12 (see Figure 1, also Figure 3, for example).



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Additionally, regardless of whether Hunt happens to use the term “bearing” to describe member 24, the member 24 acts as a “bearing” in that it 1) meets the dictionary definition of a sliding bearing as described previously and 2) it “bears” against the dovetail member 18 when the platform 26 (and thus the “bearing” member 24 affixed thereto) slides therealong along the lead screw 16.

Claims 13 and 17-19, rejected under 35 U.S.C. §103(a) as being unpatentable over either Hunt or Glover as applied to Claim 12

Firstly, it is noted that claim 18 was not rejected under 35 U.S.C. §103(a) as being unpatentable over either Hunt or Glover as applied to Claim 12, but was instead rejected under 35 U.S.C. §103(a) as being unpatentable over either Hunt or Glover as applied to Claim 12, and further in view of U.S. Pat. No. 3,133,339 to Ribich. Examiner is assuming that claim 18 was included in this section by mistake. Additionally, the rejection of claim 17 under 35 U.S.C. 103(a) as being unpatentable over Glover as applied to claim 12 was specifically and separately addressed above, and thus, Examiner is assuming that such was included in this section by mistake.

Claim 13 depends from claim 12 and adds that “a vertical height setting may be made within one-thousandth of an inch using the router vertical adjustment”. Claim 17 (as will be addressed with respect to Hunt) depends from claim 12 and adds “an end mill attached with the router”. Claim 19 depends from claim 12 and adds that “the guide is a plastic material formed to a uniform height and width”.

Appellant asserts the following:

Claims 13 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Hunt or Glover as applied to Claim 12. The rejection admits that Hunt and Glover do not

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teach the limitations of Claim 13, which recites that a vertical height setting may be made within one-thousandth of an inch using the router vertical adjustment. Office Action, p. 8, lines 4-5. The rejection also admits that Hunt and Glover do not teach the limitations of Claim 19, which recites that the guide is made from plastic. Claim 19 also recites that the plastic material is formed to a uniform height and width.

The references must disclose or suggest all the limitations of the claim. M.P.E.P. 2143 contains no exceptions for "an obvious matter of design choice." The requirement is that the references disclose all the claim limitations. Applicants freely admit that some embodiments do not incorporate the limitations recited in Claims 13 and 19, but Claims 13 and 19 do incorporate the recited limitations. Since the Office Action admits that the references do not disclose all the limitations, there is no prima facie case of obviousness against Claims 13 and 19. Therefore, the rejection of Claims 13 and 19 under 35 U.S.G. § 103(a) is improper. Claims 17 and 18 depend from allowable claims and are also allowable. The Board is requested to reverse the rejections of Claims 13 and 19 over Hunt and Glover, as well as for Claims 17-18.

Thus, it appears that Appellant is arguing that in addition to being improper in the rejection of claims 13 and 19, "design choice" rejections are always improper.

However, this is not persuasive. Note that to support a conclusion that a claim is directed to obvious subject matter, prior art references must suggest expressly or impliedly the claimed invention or an Examiner must present a "convincing line of reasoning" as to why one of ordinary skill in the art would have found the claimed invention to have been obvious. *Ex parte Clapp*, 227 USPQ 972, 973 (Bd.Pat.App. & Int. 1985). In doing so, the Examiner may rely on "logic or scientific principle." *In re Soli*, 137 USPQ 797, 801 (CCPA 1963). See also MPEP 2144.02. Examiners may also rely on legal precedent as a source of supporting rationale (e.g., aesthetic design choice, automating a manual activity, making portables integral.) See MPEP 2144.04. When determining whether or not a rejection based on design choice is appropriate, the Examiner must review the specification and ascertain *if the limitation in question is disclosed as serving any advantage or particular purpose, or whether it solves a stated problem*. The Examiner also should explain the reasoning used to determine that the prior art would have

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performed equally as well as the claimed invention. These two steps help present the aforementioned "convincing line of reasoning." *Clapp*, 227 USPQ at 973.

Note that particularly with respect to claim 13, the Office action (page 8) indicates:

Regarding the degree of precision of the vertical adjustment, it is noted that it is conventional and well-known in the machining art to utilize an "adjustment" having whatever degree of precision is required for machining a particular desired workpiece, depending on manufacturing tolerances of the workpiece, and a degree of precision within "one-thousandth of an inch" as claimed is also commonly applied. Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have made the vertical adjustments of either or both of Glover and/or Hunt the particular precision claimed because Applicant has not disclosed that utilizing the particular claimed precision provides an advantage, is used for a particular purpose, or solves a stated problem (note, for example, that Applicant in fact discloses that other precisions can be used, see page 9, for example).

Thus, Examiner did note that utilizing the particular claimed precision has not been asserted to provide an advantage or particular purpose, nor solve a stated problem, and presented a line of reasoning as to why it would have been obvious to have utilized an adjustment of whatever degree of precision was required.

Re claim 19, Examiner utilized case law in accordance with MPEP 2144.04 [In re Leshin, 125 USPQ 416. See also *Ballas Liquidating Co. v. Allied industries of Kansas, Inc.* (DC Kans) 205 USPQ 331.] to support the obviousness rationale.

Re claims 17-18, it is noted that Appellant didn't add any further arguments specific to those claims, but asserted that they "depend from allowable claims and are also allowable". Insofar as any previously presented arguments apply to claims 17 and 18 and the claims from which they depend, the above responses to those arguments also apply.

Claims 1, 2, 5, and 7-11

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Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,533,845 to John Glover ("Glover"), as discussed for Claims 12-13 and 15-21 above, and further in view of either U.S. Pat. No. 5,503,203 to Ase Stornetta ("Stornetta") or U.S. Pat. No. 3,837,383 to Kenneth Ko ("Ko").

Examiner notes that Appellant's arguments in this section reiterate Appellant's position with respect to the Glover reference described previously regarding the lack of a "guide, fastened to the skin by fasteners drilled through the skin" and regarding whether or not the machining device taught by Glover can be considered a "router".

Thus, attention is directed to the above responses to such arguments.

Claim 3

Claim 3 is also rejected under 35 USC 103 as being obvious over Glover in view of either one of (not in view of both as set forth on page 20/28 of the appeal brief) Stornetta or Ko.

Claim 3 depends from claim 1 and further adds that the "router is selected from the group consisting of a pneumatic router and an electric router".

Appellant repeats their previous position that the milling machine taught by Glover does not constitute a router.

Attention is directed to Examiner's above detailed response to this assertion.

Claim 4

Claim 4 is also rejected under 35 USC 103 as being obvious over Glover, and further in view of either one of (not in view of both as set forth on page 21/28 of the brief) Stornetta or Ko.

Claim 4 depends from claim 1 and further includes that the router has a "speed adjustment".

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Appellant asserts that “[t]here is no specific rejection of Claim 4, and therefore the rejection fails to make out a prima facie case of obviousness”.

However, Examiner directs Appellant’s attention to page 10 of the final rejection that sets forth that claims 1-5, 7-11, 14, and 22-25 (which includes claim 4) is rejected under 103 as being unpatentable over “Glover as applied to claims 12-13 and 15-21 above, and further in view of either of U.S. Pat. No. 5,503,203 (Stornetta) or U.S. Pat. No. 3,837,383 (Ko), for example”. Note that page 4 of the final rejection is part of the rejection based on “Glover as applied to claims 12-13 and 15-21 above” as referenced in the rejection of claim 4, and that page 4 explicitly states “[R]egarding claim 16, Glover specifically teaches a ‘speed adjustment’ (col. 4, lines 58-60”. Note that claim 16 is identical to claim 4 except for the claim from which it depends, such that it appears clear enough that the speed adjustment referred to also applies to claim 4, particularly in light of Examiner’s reference to the rejection of claims 12-13 and 15-21.

Claims 22-25

Claims 22-25 are also rejected under 35 USC 103 as being unpatentable over Glover and further in view of either Stornetta or Ko.

Appellant asserts that

Glover does not teach or suggest an aircraft skin lap router apparatus, as recited in Claim 22, nor does Glover teach a router apparatus useful for routing sheet metal, as recited in Claim 24. Glover does not teach a guide fastened to the skin by fasteners drilled through sheet metal or a skin, nor does Glover teach a nylon guide. Glover further does not teach or suggest a platform mounted on the guide, the platform interfacing with the guide through at least one bearing. Accordingly, the Office Action does not make out a prima facie case of obviousness, and the rejection of Claims 22 and 24 are error. Claims 23 and 25 depend from Claims 22 and 24 and are allowable because Claims 22 and 24 are allowable.

Firstly, regarding whether or not Glover teaches an “aircraft skin lap router apparatus” or a “router apparatus useful for routing sheet metal” as set forth in claims 22 and 24, respectively, it is noted that these limitations only serve to limit the claim insofar as the router apparatus taught by Glover must be structured and arranged such that it is capable of acting as an “aircraft skin lap router apparatus” or “routing sheet metal”, i.e., they only serve to limit the claim insofar as they provide any structure to the claim that permits the performing of this function. In other words, they are “intended use” type limitations.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the instant case, it is noted that there appears to be nothing preventing the tool taught Glover from performing routing of a “sheet metal” workpiece or “an aircraft skin lap” as claimed, noting that the cutting bit will cut whatever workpiece it is placed into working contact with. Further noted that the tool is blind to the workpiece on which it operates.

Additionally note that “[i]nclusion of material or article worked on by a structure being claimed does not impart patentability to the claims.” *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). See also MPEP section 2115.

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As a side note, it is noted that Glover does explicitly teach that the machining device can be used to machine an airplane wing (see at least col. 2, lines 32-37, see also col. 1, lines 6-21, noting the reference to “aircraft”, and also noting that col. 3, lines 25-29 explicitly teach that the shown example of a workpiece is an “aircraft wing”), which would appear to lend further weight to the assertion that Glover’s device can be used to perform the intended function of machining “an aircraft skin lap” or “sheet metal”.

Regarding the teaching of the “guide fastened to the skin by fasteners drilled through the sheet metal or skin” (i.e., workpiece) and the “nylon guide”, again, Glover was not relied upon to teach these limitations, but Examiner contends that it would be obvious to so modify Glover as addressed extensively above. Re the “platform interfacing with the guide through at least one bearing”, the above detailed response to Applicant’s assertions with respect to the rejection of claim 20 based on the Glover reference would apply equally here.

Re Appellant’s assertions that “[c]laims 23 and 25 depend from Claims 22 and 24 and are allowable because Claims 22 and 24 are allowable”, insofar as Appellant’s arguments with respect to claims 22 and 24 apply to claims 23 and 25, the response to those arguments equally applies.

Glover does not teach or suggest fasteners drilled through sheet metal or a skin (Appellant’s heading, page 22/28 of the brief)

Appellant’s previous arguments with respect to this subject are repeated here. Attention is directed to the above response to those arguments.

Glover does not teach or suggest a platform mounted on the guide, the platform interfacing with the guide through at least one bearing (Appellant’s heading, page 23/28 of the brief)

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Appellant asserts that claims 22 and 24 “recite that there is at least one bearing mounted on the platform and interfacing with the guide”, and further asserts that the “rejection of Claims 22-25 does not specifically mention these claim limitations”.

However, Examiner notes that page 10 of the final rejection sets forth that claims 22-25 are rejected under 35 USC 103 as being unpatentable over “Glover as applied to claims 12-13 and 15-21 above”, and further in view of either of Stornetta or Ko. The referred-to rejections based on Glover as applied to claims 12-13 and 15-21 were located on pages 3-10 of the final rejection. Note especially that page 4 of the final rejection states: “[S]pecifically regarding claim 20, note that platform 12 has a protruding member that mates with the aforescribed ‘guide’ track of the subframe 30 (see Figure 5, for example), which protruding member ‘bears’ against and interfaces with said ‘guide’ track”. Thus, the final office action did indeed mention, via the reference to the rejection of claim 20, these claim limitations in the rejection of claims 22-25.

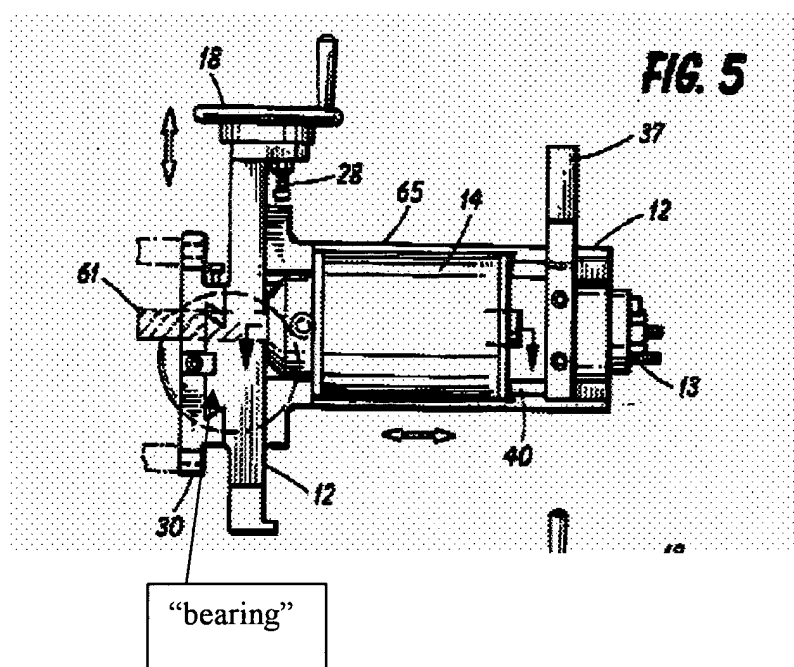
Appellant has asserted the following:

The rejection does not state, and Glover does not describe or suggest that subframe 30 is a "bearing." Applicants have claimed a bearing mounted on the platform and interfacing with the guide. While not importing limitations from the specification, it is clear from Applicants' Fig. 5, numeral 66, that a bearing may be an anti-friction type rotary bearing, for the platform to interface with, so that the platform, and thus the router, can move along the guide. Glover does not suggest that subframe 30 has any antifriction or “bearing” qualities. Glover states that his machine includes an attachment subassembly 30 which includes one or more attachment sites through which subassembly 30 may be secured” to the workpiece. Glover, col. 3, lines 33-36.

In the final rejection, Examiner noted that “platform 12 has a protruding member that mates with the aforescribed ‘guide’ track of the subframe 30 (see Figure 5, for example), which protruding member ‘bears’ against and interfaces with said ‘guide track’”. This

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dovetailed-type bearing is labeled below in the reproduction of Figure 5 and interfaces with a female dovetail-type guide area of “guide” 30.



Regardless of what is shown in the Figures of Appellant’s drawings (Examiner believes Applicant meant to reference Figure 8 rather than Figure 5 as no element 66 is shown in Figure 5), the claim language does not call for any specific bearing, such as the argued “anti-friction type rotary bearing” or some bearing having “anti-friction properties”. Thus, in response to applicant's argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., that the bearing is an “anti-friction type rotary bearing” or that the bearing has “anti-friction properties”) are not recited in the rejected claim 20. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Further note that Merriam-Webster's Collegiate Dictionary, 10th ed., provides the definition of a bearing as "a machine part in which another part (as a journal or pin) turns or **slides**". Note that the dovetail arrangement taught by Glover forms a **sliding** bearing arrangement in that the male dovetail slides in the female dovetail, and thus meets the claim language of claims 22 and 24 re the "platform, mounted on the guide, the platform interfacing with the guide through at least one bearing".

Appellant further asserts the following:

Subframe 30 is attached to the workpiece and will not move. Subframe 30 is an interface, but cannot be a bearing. Glover does not describe or suggest at least this limitation of Claim 22.

It appears that Appellant may have misunderstood the rejection of claim 22. It is noted that Examiner did not assert that subframe 30 was moveable with respect to the workpiece once attached thereto, and with respect to the claimed "bearing mounted on the platform and interfacing with the guide", Examiner did not assert that subframe 30 was intended to constitute such a bearing. Instead, as described previously, the male dovetail member protruding from movable platform 12 was asserted by Examiner to be the claimed "bearing" mating with the guide 30 at the female dovetail or guiding portion thereof. Thus, claims 22 and 24 are also met by Glover.

Claims 5-6

Claim 6, and alternatively, Claim 5 are rejected under 35 USC 103 as being unpatentable over Glover and further in view of either Stornetta or Ko, and further in view of Ribich.

Appellant asserts that "[C]laims 5 and 6 are allowable because they depend from allowable Claim 1".

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Thus, to the extent that Appellant's previous arguments apply to the rejection of claim 1, the Examiner's responses equally apply.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


Erica E. Cadogan
Primary Examiner
Art Unit 3722

Conferees:


Boyer Ashley
Supervisory Patent Examiner


Joseph Hail
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Attachment: Form PTO-892